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AUG 07 2002

TECH CENTER 1600/29

SEQUENCE LISTING



10> Institute National De La Sante Et De La Recherche Medicale
Raposo, Graca
Thery, Clotilde
Amigorena, Sebastian

<120> COMPOSITIONS AND METHODS USING LACTADHERIN OR VARIANTS THEREOF

<130> 255/013 KTM

<140> US 09/582,340

<141> 1999-11-23

<160> 6

<170> PatentIn version 3.1

<210> 1

<211> 1934

<212> DNA

<213> Homo sapiens

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<221> CDS

<222> (61)..(1224)

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Met Pro Arg Pro Arg Leu Leu Ala Ala Leu Cys Gly Ala Leu Leu Cys
1 5 10 15
gcc ccc agc ctc ctc gtc gcc ctg gat atc tgt tcc aaa aac ccc tgc 156
Ala Pro Ser Leu Leu Val Ala Leu Asp Ile Cys Ser Lys Asn Pro Cys
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cac aac ggt ggt tta tgc gag gag att tcc caa gaa gtg cga gga gat 204
His Asn Gly Gly Leu Cys Glu Glu Ile Ser Gln Glu Val Arg Gly Asp
35 40 45
gtc ttc ccc tgc tac acc tgc acg tgc ctt aag ggc tac gcg ggc aac 252
Val Phe Pro Ser Tyr Thr Cys Thr Cys Leu Lys Gly Tyr Ala Gly Asn
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cac tgt gag acg aaa tgt gtc gag cca ctg ggc atg gag aat ggg aac 300
His Cys Glu Thr Lys Cys Val Glu Pro Leu Gly Met Glu Asn Gly Asn
65 70 75 80
att gcc aac tca cag atc gcc gcc tca tct gtg cgt gtg acc ttc ttg 348
Ile Ala Asn Ser Gln Ile Ala Ala Ser Ser Val Arg Val Thr Phe Leu
85 90 95
ggt ttg cag cat tgg gtc ccg gag ctg gcc cgc ctg aac cgc gca ggc 396
Gly Leu Gln His Trp Val Pro Glu Leu Ala Arg Leu Asn Arg Ala Gly
100 105 110

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 Gln Val Asn Leu Leu Arg Arg Met Trp Val Thr Gly Val Val Thr Gln
 130 135 140

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 Gly Ala Ser Arg Leu Ala Ser His Glu Tyr Leu Lys Ala Phe Lys Val
 145 150 155 160

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 Ala Tyr Ser Leu Asn Gly His Glu Phe Asp Phe Ile His Asp Val Asn
 165 170 175

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gtc aac ctg ttt gag acc cct gtg gag gct cag tac gtg aga ttg tac 684
 Val Asn Leu Phe Glu Thr Pro Val Glu Ala Gln Tyr Val Arg Leu Tyr
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 Pro Thr Ser Cys His Thr Ala Cys Thr Leu Arg Phe Glu Leu Leu Gly
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 Leu His Leu Phe Ser Trp Asn Pro Ser Tyr Ala Arg Leu Asp Lys Gln
 260 265 270

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 275 280 285

ctg cag gtg gac ctg gcc tcc tgc aag gag gtg aca gcc atc atc acc 972
 Leu Gln Val Asp Leu Gly Ser Ser Lys Glu Val Thr Gly Ile Ile Thr
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cag ggg gcc cgt aac ttt gcc tct gtc cag ttt gtg gca tcc tac aag 1020
 Gln Gly Ala Arg Asn Phe Gly Ser Val Gln Phe Val Ala Ser Tyr Lys
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gtt gcc tac agt aat gac agt gcg aac tgg act gag tac cag gac ccc 1068
 Val Ala Tyr Ser Asn Asp Ser Ala Asn Trp Thr Glu Tyr Gln Asp Pro
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agg act gcc agc agt aag atc ttc cct gcc aac tgg gac aac cac tcc 1116
 Arg Thr Gly Ser Ser Lys Ile Phe Pro Gly Asn Trp Asp Asn His Ser

MS
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 Ile Leu Pro Val Ala Trp His Asn Arg Ile Ala Leu Arg Leu Glu Leu
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 35 40 45

Val Phe Pro Ser Tyr Thr Cys Thr Cys Leu Lys Gly Tyr Ala Gly Asn

His Cys Glu Thr Lys Cys Val Glu Pro Leu Gly Met Glu Asn Gly Asn
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 Ile Ala Asn Ser Gln Ile Ala Ala Ser Ser Val Arg Val Thr Phe Leu
 85 90 95
 Gly Leu Gln His Trp Val Pro Glu Leu Ala Arg Leu Asn Arg Ala Gly
 100 105 110
 Met Val Asn Ala Trp Thr Pro Ser Ser Asn Asp Asp Asn Pro Trp Ile
 115 120 125
 Gln Val Asn Leu Leu Arg Arg Met Trp Val Thr Gly Val Val Thr Gln
 130 135 140
 Gly Ala Ser Arg Leu Ala Ser His Glu Tyr Leu Lys Ala Phe Lys Val
 145 150 155 160
 Ala Tyr Ser Leu Asn Gly His Glu Phe Asp Phe Ile His Asp Val Asn
 165 170 175
 Lys Lys His Lys Glu Phe Val Gly Asn Trp Asn Lys Asn Ala Val His
 180 185 190
 Val Asn Leu Phe Glu Thr Pro Val Glu Ala Gln Tyr Val Arg Leu Tyr
 195 200 205
 Pro Thr Ser Cys His Thr Ala Cys Thr Leu Arg Phe Glu Leu Leu Gly
 210 215 220
 Cys Glu Leu Asn Gly Cys Ala Asn Pro Leu Gly Leu Lys Asn Asn Ser
 225 230 235 240
 Ile Pro Asp Lys Gln Ile Thr Ala Ser Ser Ser Tyr Lys Thr Trp Gly
 245 250 255
 Leu His Leu Phe Ser Trp Asn Pro Ser Tyr Ala Arg Leu Asp Lys Gln
 260 265 270
 Gly Asn Phe Asn Ala Trp Val Ala Gly Ser Tyr Gly Asn Asp Gln Trp
 275 280 285

Leu Gln Val Asp Leu Gly Ser Ser Lys Glu Val Thr Gly Ile Ile Thr
290 295 300

Gln Gly Ala Arg Asn Phe Gly Ser Val Gln Phe Val Ala Ser Tyr Lys
305 310 315 320

Val Ala Tyr Ser Asn Asp Ser Ala Asn Trp Thr Glu Tyr Gln Asp Pro
325 330 335

Arg Thr Gly Ser Ser Lys Ile Phe Pro Gly Asn Trp Asp Asn His Ser
340 345 350

His Lys Lys Asn Leu Phe Glu Thr Pro Ile Leu Ala Arg Tyr Val Arg
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Ile Leu Pro Val Ala Trp His Asn Arg Ile Ala Leu Arg Leu Glu Leu
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Leu Gly Cys
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Arg Val Leu Ala Ala Leu Cys Gly Met Leu Leu Cys Ala Ser Gly Leu
5 10 15 20

ttc gcc gcg tct ggt gac ttc tgt gac tcc agc ctg tgc ctg aac ggt 153
Phe Ala Ala Ser Gly Asp Phe Cys Asp Ser Ser Leu Cys Leu Asn Gly
25 30 35

ggc acc tgc ttg acg ggc caa gac aat gac atc tac tgc ctc tgc cct 201
Gly Thr Cys Leu Thr Gly Gln Asp Asn Asp Ile Tyr Cys Leu Cys Pro
40 45 50

gaa ggc ttc aca ggc ctt gtg tgc aat gag act gag aga gga cca tgc 249
Glu Gly Phe Thr Gly Leu Val Cys Asn Glu Thr Glu Arg Gly Pro Cys
55 60 65

tcc cca aac cct tgc tac aat gat gcc aaa tgt ctg gtg act ttg gac	297
Ser Pro Asn Pro Cys Tyr Asn Asp Ala Lys Cys Leu Val Thr Leu Asp	
70 75 80	
aca cag cgt ggg gac atc ttc acc gaa tac atc tgc cag tgc cct gtg	345
Thr Gln Arg Gly Asp Ile Phe Thr Glu Tyr Ile Cys Gln Cys Pro Val	
85 90 95 100	
ggc tac tgc ggc atc cac tgt gaa acc gag acc aac tac tac aac ctg	393
Gly Tyr Ser Gly Ile His Cys Glu Thr Glu Thr Asn Tyr Tyr Asn Leu	
105 110 115	
gat gga gaa tac atg ttc acc aca gcc gtc ccc aat act gcc gtc ccc	441
Asp Gly Glu Tyr Met Phe Thr Thr Ala Val Pro Asn Thr Ala Val Pro	
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acc ccg gcc ccc acc ccc gat ctt tcc aac aac cta gcc tcc cgt tgt	489
Thr Pro Ala Pro Thr Pro Asp Leu Ser Asn Asn Leu Ala Ser Arg Cys	
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Ser Thr Gln Leu Gly Met Glu Gly Gly Ala Ile Ala Asp Ser Gln Ile	
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Ser Ala Ser Tyr Val Tyr Met Gly Phe Met Gly Leu Gln Arg Trp Gly	
165 170 175 180	
ccg gag ctg gct cgt ctg tac cgc aca ggg atc gtc aat gcc tgg cac	633
Pro Glu Leu Ala Arg Leu Tyr Arg Thr Gly Ile Val Asn Ala Trp His	
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gcc agc aac tat gat agc aag ccc tgg atc cag gtc aac ctt ctg cgg	681
Ala Ser Asn Tyr Asp Ser Lys Pro Trp Ile Gln Val Asn Leu Leu Arg	
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aag atg cgg gta tca ggt gtg atg acg cag ggt gcc agc cgt gcc ggg	729
Lys Met Arg Val Ser Gly Val Met Thr Gln Gly Ala Ser Arg Ala Gly	
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agg cgc gag tac ctg aag acc ttc aag gtg gct tac agc etc gac gga	777
Arg Ala Glu Tyr Leu Lys Thr Phe Lys Val Ala Tyr Ser Leu Asp Gly	
230 235 240	
cgc aag ttt gag ttc atc cag gat gaa agc ggt gga gac aag gag ttt	825
Arg Lys Phe Glu Phe Ile Gln Asp Glu Ser Gly Gly Asp Lys Glu Phe	
245 250 255 260	
ttg ggt aac ctg gac aac aac agc ctg aag gtt aac atg ttc aac ccg	873
Leu Gly Asn Leu Asp Asn Asn Ser Leu Lys Val Asn Met Phe Asn Pro	
265 270 275	
act ctg gag gca cag tac ata agg ctg tac cct gtt tgc gac cgc	921
Thr Leu Glu Ala Gln Tyr Ile Arg Leu Tyr Pro Val Ser Cys His Arg	
280 285 290	
ggc tgc acc etc cgc ttc gag etc ctg ggc tgt gag ttg cac gga tgt	969
Gly Cys Thr Leu Arg Phe Glu Leu Leu Gly Cys Glu Leu His Gly Cys	

ctc gag ccc ctg ggc ctg aag aat aac aca att cct gac agc cag atg 1017
 Leu Glu Pro Leu Gly Leu Lys Asn Asn Thr Ile Pro Asp Ser Gln Met
 310 315 320

tca gcc tcc agc agc tac aag aca tgg aac ctg cgt gct ttt ggc tgg 1065
 Ser Ala Ser Ser Ser Tyr Lys Thr Trp Asn Leu Arg Ala Phe Gly Trp
 325 330 335 340

tac ccc cac ttg gga agg ctg gat aat cag ggc aag atc aat gcc tgg 1113
 Tyr Pro His Leu Gly Arg Leu Asp Asn Gln Gly Lys Ile Asn Ala Trp
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acg gct cag agc aac agt gcc aag gaa tgg ctg cag gtt gac ctg ggc 1161
 Thr Ala Gln Ser Asn Ser Ala Lys Glu Trp Leu Gln Val Asp Leu Gly
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act cag agg caa gtg aca gga atc atc acc cag ggg gcc cgt gac ttt 1209
 Thr Gln Arg Gln Val Thr Gly Ile Ile Thr Gln Gly Ala Arg Asp Phe
 375 380 385

ggc cac atc cag tat gtg gag tcc tac aag gta gcc cac agt gat gat 1257
 Gly His Ile Gln Tyr Val Glu Ser Tyr Lys Val Ala His Ser Asp Asp
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ggt gtg cag tgg act gta tat gag gag caa gga agc agc aag gtc ttc 1305
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 405 410 415 420

cag ggc aac ttg gac aac aac tcc cac aag aag aac atc ttc gag aaa 1353
 Gln Gly Asn Leu Asp Asn Asn Ser His Lys Lys Asn Ile Phe Glu Lys
 425 430 435

ccc ttc atg gct cgc tac gtg cgt gtc ctt cca gtg tcc tgg cat aac 1401
 Pro Phe Met Ala Arg Tyr Val Arg Val Leu Pro Val Ser Trp His Asn
 440 445 450

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 455 460

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aatacattcg tggctctccac tgg 2077

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35 40 45

Cys Leu Cys Pro Glu Gly Phe Thr Gly Leu Val Cys Asn Glu Thr Glu
50 55 60

Arg Gly Pro Cys Ser Pro Asn Pro Cys Tyr Asn Asp Ala Lys Cys Leu
65 70 75 80

Val Thr Leu Asp Thr Gln Arg Gly Asp Ile Phe Thr Glu Tyr Ile Cys
85 90 95

Gln Cys Pro Val Gly Tyr Ser Gly Ile His Cys Glu Thr Glu Thr Asn
100 105 110

Tyr Tyr Asn Leu Asp Gly Glu Tyr Met Phe Thr Thr Ala Val Pro Asn
115 120 125

Thr Ala Val Pro Thr Pro Ala Pro Thr Pro Asp Leu Ser Asn Asn Leu
130 135 140

Ala Ser Arg Cys Ser Thr Gln Leu Gly Met Glu Gly Gly Ala Ile Ala
145 150 155 160

Asp Ser Gln Ile Ser Ala Ser Tyr Val Tyr Met Gly Phe Met Gly Leu
165 170 175

Gln Arg Trp Gly Pro Glu Leu Ala Arg Leu Tyr Arg Thr Gly Ile Val
180 185 190

Asn Ala Trp His Ala Ser Asn Tyr Asp Ser Lys Pro Trp Ile Gln Val
195 200 205

Asn Leu Leu Arg Lys Met Arg Val Ser Gly Val Met Thr Gln Gly Ala
210 215 220

Ser Arg Ala Gly Arg Ala Glu Tyr Leu Lys Thr Phe Lys Val Ala Tyr
225 230 235 240

Ser Leu Asp Gly Arg Lys Phe Glu Phe Ile Gln Asp Glu Ser Gly Gly
245 250 255

Asp Lys Glu Phe Leu Gly Asn Leu Asp Asn Asn Ser Leu Lys Val Asn
260 265 270

Met Phe Asn Pro Thr Leu Glu Ala Gln Tyr Ile Arg Leu Tyr Pro Val
275 280 285

Ser Cys His Arg Gly Cys Thr Leu Arg Phe Glu Leu Leu Gly Cys Glu
290 295 300

Leu His Gly Cys Leu Glu Pro Leu Gly Leu Lys Asn Asn Thr Ile Pro
305 310 315 320

Asp Ser Gln Met Ser Ala Ser Ser Ser Tyr Lys Thr Trp Asn Leu Arg
325 330 335

Ala Phe Gly Trp Tyr Pro His Leu Gly Arg Leu Asp Asn Gln Gly Lys
340 345 350

Ile Asn Ala Trp Thr Ala Gln Ser Asn Ser Ala Lys Glu Trp Leu Gln
355 360 365

Val Asp Leu Gly Thr Gln Arg Gln Val Thr Gly Ile Ile Thr Gln Gly
370 375 380

Ala Arg Asp Phe Gly His Ile Gln Tyr Val Glu Ser Tyr Lys Val Ala
385 390 395 400

His Ser Asp Asp Gly Val Gln Trp Thr Val Tyr Glu Glu Gln Gly Ser
405 410 415

Ser Lys Val Phe Gln Gly Asn Leu Asp Asn Asn Ser His Lys Lys Asn

420

425

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